# E-SHIKHON: Online Learning Management System

## Project Documentation

### Project Overview

**Project Name:** E-SHIKHON **Type:** Online Learning Management System (LMS) **Last Updated:** January 14, 2024

**Technology Stack**

- **Backend:** PHP
- **Database:** MySQL
- **Frontend:** HTML5, CSS3, Bootstrap 5
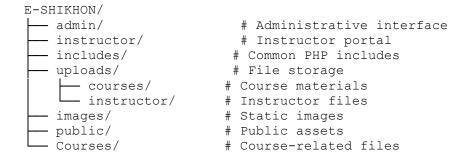- **Additional Libraries:** Font Awesome (for icons)
- **Server:** Apache (XAMPP)

## 1. System Architecture

### 1.1 Core Components

1. **User Management System**
2. **Course Management System**
3. **Instructor Portal**
4. **Admin Dashboard**
5. **Content Delivery System**

### 1.2 Directory Structure

```
E-SHIKHON/
├── admin/                  # Administrative interface
├── instructor/             # Instructor portal
├── includes/              # Common PHP includes
├── uploads/               # File storage
│   ├── courses/           # Course materials
│   └── instructor/        # Instructor files
├── images/                # Static images
├── public/                # Public assets
└── Courses/               # Course-related files
```

## 2. Feature Details

### 2.1 User Management

**Files:**

- `user_signup.php` (8.0KB) - User registration
- `user_login.php` (5.0KB) - Authentication
- `viewprofile.php` (6.3KB) - Profile viewing
- `editprofile.php` (8.7KB) - Profile editing
- `change-password.php` (6.6KB) - Password management

**Features:**

- Secure user registration
- Email-based authentication
- Profile management
- Password recovery
- Session management

## 2.2 Course Management

**Files:**

- `all_courses.php` (8.9KB) - Course listing
- `course_details.php` (10KB) - Course information
- `view_enrolled_course.php` (14KB) - Course viewer
- `process_enrollment.php` (2.4KB) - Enrollment handler

**Features:**

- Course categorization
- Course enrollment system
- Progress tracking
- Material download system
- Course rating system

## 2.3 Course Categories

1. **Ongoing Courses** (`ongoing_courses.php`)
   - Active course tracking
   - Progress visualization
   - Continue learning functionality
2. **Upcoming Courses** (`upcoming_courses.php`)
   - Pre-enrollment options
   - Course previews
   - Start date notifications

## 2.4 Instructor Features

**Files:**

- `view_instructor_profile.php` (7.2KB)
- `viewinstructor.php` (7.3KB)

**Capabilities:**

- Course creation
- Content management
- Student progress monitoring
- Profile customization
- Material upload system

# 3. Database Schema

## 3.1 Main Tables

1. **users**
   - id (Primary Key)
   - email
   - password
   - full_name
   - profile_image
   - status
   - created_at
2. **instructor**
   - id (Primary Key)
   - full_name
   - email
   - field_expertise
   - experience_years
   - bio
   - profile_image
   - portfolio_link
   - status
3. **courses**
   - id (Primary Key)
   - title
   - description
   - instructor_id (Foreign Key)
   - course_image
   - status
   - created_at
   - start_date
   - level
4. **enrollments**

- id (Primary Key)
- user_id (Foreign Key)
- course_id (Foreign Key)
- enrollment_date
- progress
- status

## 4. Security Implementation

### 4.1 Authentication

- Session-based authentication
- Secure password hashing
- Role-based access control

### 4.2 Data Protection

- SQL injection prevention
- XSS protection
- CSRF protection
- Input validation

### 4.3 File Security

- Secure file upload system
- File type validation
- Size restrictions
- Access control

## 5. User Interface

### 5.1 Design Features

- Responsive layout
- Mobile-friendly design
- Interactive elements
- Progress visualization
- Modern card-based interface

### 5.2 Key Components

- Navigation bar
- Course cards
- Profile sections
- Progress bars
- Download buttons

- Rating system

# 6. User Roles and Permissions

### 6.1 Student

**Permissions:**

- Browse courses
- Enroll in courses
- View materials
- Track progress
- Rate courses
- Edit profile

### 6.2 Instructor

**Permissions:**

- Create courses
- Manage content
- View enrollments
- Track student progress
- Customize profile
- Upload materials

### 6.3 Administrator

**Permissions:**

- Manage users
- Oversee courses
- Control instructors
- System settings
- Content moderation

# 7. File Management

### 7.1 Upload Directories

1. **Course Materials**
   - Location: `/uploads/courses/`
   - Types: PDFs, videos, documents
2. **Profile Images**
   - Location: `/uploads/profiles/`
   - Types: JPG, PNG, GIF

3. **Course Images**
    - Location: `/uploads/courses/thumbnails/`
    - Types: JPG, PNG

# 8. Performance Optimization

## 8.1 Implemented Features

- Image optimization
- CSS minification
- Efficient database queries
- Caching mechanisms

## 8.2 Best Practices

- Prepared statements
- Optimized file storage
- Efficient session handling
- Resource optimization

# 9. Future Enhancements

## 9.1 Planned Features

1. Live session support
2. Advanced analytics
3. Payment integration
4. Mobile application
5. API development

## 9.2 Potential Improvements

1. Enhanced search functionality
2. Advanced reporting
3. Social learning features
4. Gamification elements
5. Certificate system

# 10. Support and Maintenance

## 10.1 Regular Tasks

- Database backup
- Security updates
- Content moderation
- User support

- Performance monitoring

## 10.2 Documentation

- Code comments
- API documentation
- User guides
- System architecture
- Database schema

---

*Note: This documentation is maintained and updated regularly to reflect system changes and improvements.*

Last Updated: January 14, 2024 Version: 1.0